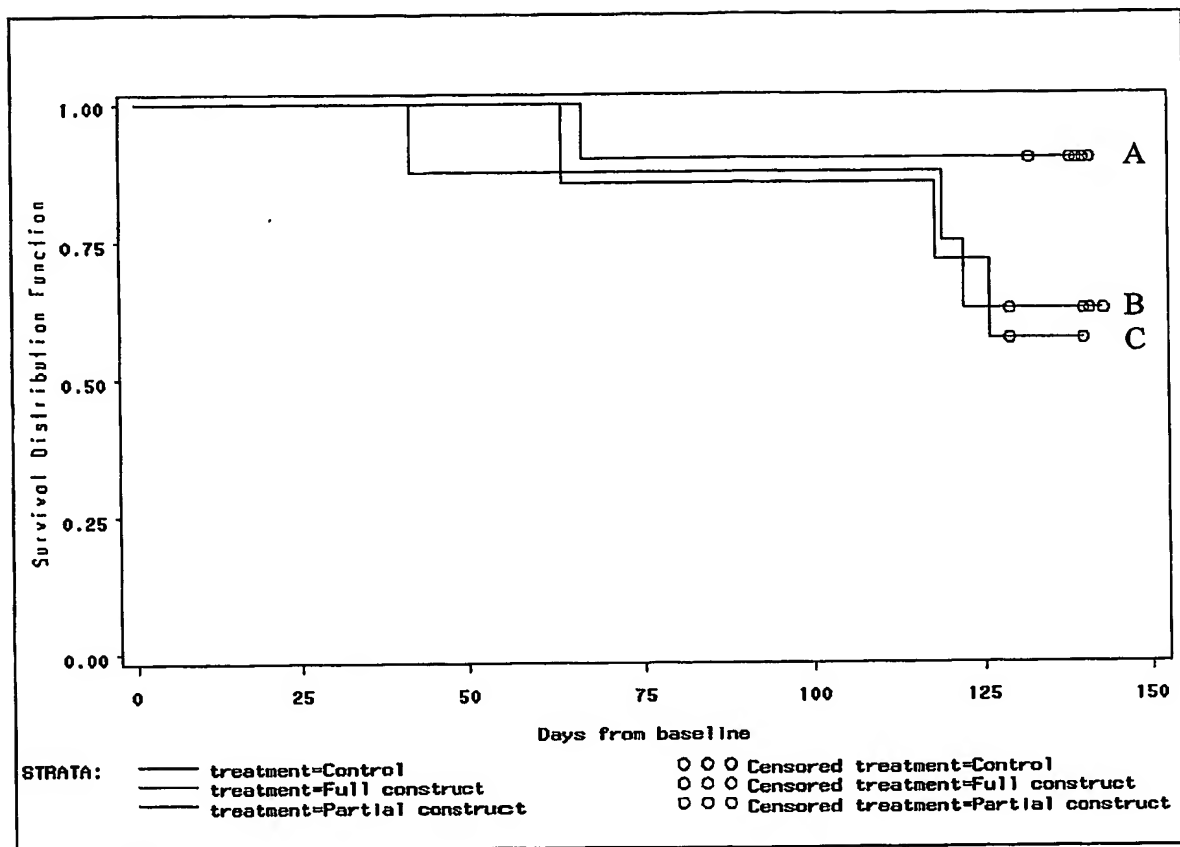


Figure 1

2/28

**FIGURE 2**

3/28

DNA sequence of the insertion site of VIR201 containing HIV gag/pol, human interferon and reporter cassette
(Ecogpt & beta-galactosidase) inserts

1 AGACAGTTATCCCAATACGGTATACAAGGAGACAATTATCAATTTTGTAGATTCTTCC
TCTGTCAATAGGGTTATGCCATATGTTCTCTGTTAAATAGTTAAAAACATCTAAGAAGG

Fowlpox virus 5' flanking region of insertion site -->

61 AATGAAGTTGCTATAAACAGGCACTCTATTATAGGAGCTAGACAGTTGAATCCTATATGC
T TACTTCAACGATATTGTCCGTGAGATAAATATCCTCGATCTGTCAACTTAGGATATACG

121 GTAGTATCTTTTATCCCTTTTGATCCAGAACATAAAAGTTTTTTCGTTATATATGTTGGT
CATCATAGAAAAATAGGGAACTAGGCTTGTATTTCAAAAAGCAATATATACAACCA

181 AGATATAAAGATAAGTATTGTGGAATTTCCCTACGTAGCTGATAGAGAAGATATGTACAAA
TCTATATTTCTATTCTATAACACCTTAAAGGATGCATCGACTATCTCTTCTATACATGTTT

241 GTTATCAACAGGATATACCCGTACGTTAGTTGTTTACCTCGTATCAGATGGTATAATA
CAATAGTTGTCCCTATATGGGCATGCAATCAACAAAAATGGAGCATAGTCTACCATATAT

301 AATTTTCATACTACTCCCGTAGCTAATCACACTAGAAAATATTAAACCCCTTCCAGTTAAT
TTAAAAGTATGATGAGGGCATCGATTAGTGTGATCTTTATAAATTTGGGGAAGTCAATTA

361 TATTGTAATACTTTTATGTGAAATAGTATATGATTTGAATATTAAAGTTTGAACAAAGGT
ATAACATTATGAAATACACTTTATCATATATACTAAAACTTATAAATTTCAAACCTTGTTC

421 GTTATGTCATTCGGTGTTCATGCCCTTTTGTACCAAAACAGTTTGTATCTATTATCAAT
CAATACAGATAAGGCCCAAGTACGGAAAAACATGGTTTGTCAACATAGATAAATAGTTA

Figure 3 continued

4/28

481 TTACCGATGATATCTCATAAATGTACAGCGTCCAGTAACATAAGATAACATACACAT
AATGGTCTACTATAAGAGTATTGTACATGTGCAGGTCATTGTATCTTATGTATTGTGTA

541 ATAGATAATAAAAAAGCTAAAAAGATACTTATAATAATAAAGATAAAATTTCTAAAGGGT
TATCTATTATTTTCGATTTTCTTATGAATATTATTATTTCTATTAAAGATTTCCCA

601 ACTATCATGCAAGTACTTTTAAAAAAGTAAATATCATAAGACACAAGAGTATACATAT
TGATAGTACGTTCCATGAAAAATTTTTCATTTATAGTATCTGTGTTCTTCATATGTATA

661 ACTATAACGTATTCTTTTGTATGCCCTAACTAGAAGATACTAAGTCATCGCTGCCA
TGATATTGCATAAAGAAGAAAACTAACGGGATTTGATCTTCTATGATTCAGTAGCGACGGT

721 AGTACGTGCAATAAGCCATATTAGATGGCGTAGATATGTTACAAAAAATTTTAAATGAT
TCATGCACGTTATTTCGGTATAATCTACCCGCATCTATACAATGTTTTTGAAAAATTACTA

781 ACAATATAAATGGAAATAGCTAGAGAAACGCTAATAACGATAGGCCTTACTATATTAGTA
TGTATATTACCTTTATCGATCTCTTTGCGATTATTGCTATCCGGAATGATATAAATCAT

841 GTGTTATTGATAATAAATGCTGATCTCGCTAGTGTAAAGATTAAATACCGGGTGTATTATAGT
CACAAATACTATTATTGACCTAAGAGCGATCACGATTCTAATTATGGCCCAACAAATATCA

901 TCAGTATCGAGGTCATCATTTACAGCAGGAAGAATACTTCGTTTTTATGGAAAATTTTCT
AGTCATAGCTCCAGTAGTAAATGTCGCTTCTTATGAAGCAAAATACCTTTTATAAAAGA

961 ACTATTATGTTTATTCCTGGAATAATTATATTGTACGCTGCTTATATAAGAAAAATTAAA
TGATAATACAAAATAAGGACCTTATTATAATAACATGCGACGAATATATCTTTTAAATTT

1021 ATGAAAAATAATTAGAATCTGAAAAATGTCTTCTGGAAGCATCCATGTTATTACAGGCCCT
TACTTTTATTAACTTAGACTTTTACAGAAGACCTTCGTAGGTACAATAATGTCCGGGA

Figure 3 continued

5/28

> M S S G S I H V I T G P
Fowlpox virus tk protein coding sequence→

1081 ATGTTTCCGGTAAACATCGGAGCTAGTAAGAATAAAAAGATTATGCTATCTAAC
 TACAAAAGGCCATTTGTAGCCTCGATCATCTCTTATTTTCTAAATACGATAGATTG
 > M F S G K T S E L V R R I K R F M L S N

1141 TTAAATGTATTATTAAACATTGTGGAGATAATAGATATAATGAGGATGATATAAAC
 AAATTACATAATAATAATTGTAAACACCTCTATTATCTATATCTACTCTACTATATTG
 > F K C I I I K H C G D N R Y N E D D I N

1201 AAAGTATATACTCATGATCTATTGTTATGGAGGCTACGGCATCTTCTAATCTATCTGTA
 TTTCATATATGAGTACTAGATAACAAATACCTCCGATGCCGTAGAAGATTAGATAGACAT
 > K V Y T H D L L F M E A T A S S N L S V

1261 TTAGTACCTACGCTATTAAATGATGGAGTTCAGGTAATAGTATAAGCAGGCTCAATTC
 AATCATGGATGCGATAATTACTACCTCAAGTCCATTATCCATATCTGCTCCGAGTTAAG
 > L V P T L L N D G V Q V I G I D E A Q F

1321 TTTCTAGACATAGTAGAATTTAGTGAATCCATGGCTAATTTAGGTAAAACAGTTATTGTG
 AAAGATCTGTATCATCTTAAATCACTTAGGTACCGATTAAATCCATTTTGTCAATAACAC
 > F L D I V E F S E S M A N L G K T V I V

1381 GCCGCGCTTAACGGTGATTTTAAACGCGAATATTCCGTAACGTATATAAGTTATTATCA
 CGCGCGGAATTGCCACTAAAATTTCGGCTTAATAAGCCATTGCATATATTCAATAATAGT
 > A A L N G D F K R E L F G N V Y K L L S

1441 TTAGCTGAACAGTGTCCAGTTTGACAGCTATTTCGGTGAAATGCTATTGCGACGCTTCG
 AATCGACTTTGTACAGGTCAAACACTGTCGATAAACGCACCTTACGATAACGCTGCGAAGC

Figure 3 continued

6/28

```

> L A E T V S S L T A I C V K C Y C D A S
1501 TTTTCTAAACGAGTTACAGAAAATAAAGAAAGTAATGGATATAGGTGGTAAAGATAAATAC
    AAAAGATTTGCTCAATGCTTTTATTTCTTCAATACCTATATCCACCATTTCTATTATG
> F S K R V T E N K E V M D I G G K D K Y
1561 ATAGCCGTGTAGGAAATGTTTTTTTAGTAATTAAGgggagatctccccatggcccaaa
    TATCGGCACACATCCTTTACAAAAAATCATTAATccccctctagaggggtaccggggttt
> I A V C R K C F F S N •
1621 gcggggttgaacagggttgcctcaggttgcctgtgtcatggatgcagcctccagaat
    cgccccaaactgtccaaagcgagtcctcaaacggacacagtagctacgtacgtcggaggtctta
1681 acttactgaaaactattgtaaccgcctgaagttaaaaaaacaacgcccggcagtgcca
    tgaatgaccttggataaacattggcgaggacttcaattttcttgtgcgggccgtcacggt
1741 ggcgttgaaaaagaTTAGCGACCGGAGATTGGCGGGACGAATACGACGCCATATCCCACG
    ccgcaacttttctAATCGCTGGCCTCTAACCGCCCTGCTTATGCTGCGGGTATAGGTGC
    < • R G S I P P V F V G M D W P
    End of Ecogpt protein coding sequence
1801 GCTGTTCAATCCAGGTATCTTGGGGATATCAACAACATAGTCATCAACCAGCGGACGAC
    CGACAAGTTAGGTCCATAGAACGCCCTATAGTTGTTGTATCAGTAGTTGGTCGCCCTGCTG
    < Q E I W T D Q P I D V V Y D D V L P R G
1861 CAGCCGGTTTTCGAAGATGGTGACAAAGTGGCTTTTGGATACATTTACGGAATCGCAA
    GTCGGCCAAAACGCTTCTACCACTGTTTCACGCGGAAAACCTATGTAAGTCTTAGCGTT
    < A P K A F I T V F H A K P Y M E R I A V

```

Figure 3 continued

7/28

```

1921 CCGCAGTACCAACCGGTATCCACAGGTCAATCAATACGATGAAGCCTTCGCCATCGCCTT
      GCGTCATGGTGGCCATAGGTGGTCCAGTAGTTATTGCTACTTCGGAAGCGGTAGCGGAA
      < A T G G T D V L D D I V I F G E G D G E

1981 CTGCGCGTTTCAGCACTTTAAGCTCGCGCTGGTTGTCGTGATCGTAGCTGGAATAACAA
      GACGCGCAAAAGTCGTGAAATTCAGCGCGACCAACAGCACTAGCATCGACCTTTATGTTT
      < A R K L V K L E R Q N D H D Y S S I C V

2041 CCGTATCGACATGACGAATACCCAGTTCACGCGCCAGTAACGCACCCGGTACCAGACCGC
      GCCATAGCTGTACTGCTTATGGGTCAAGTGGCGGTCAATTGCGTGGGCCATGGTCTGGCG
      < T D V H R I G L E R A L L A G P V L G G

2101 CACGGCTTACGGCAATAATGCCCTTTCATTGTTCAGAAGGCATCAGTCGGCTTCGGAGTT
      GTGCCGAATGCCGTTATTACGGAAGGTAAACAAGTCTTCCGTAGTCAGCCGAACGCTCAA
      < R S V A I I G K W Q E S P M L R S A L K

2161 TACGTGCATGGATCTGCAACATGTCCAGGTGACGATGTATTTTCGCTCATgtgaagtg
      ATGCACGTACCTAGACGTTGTACAGGGTCCACTGCTACATAAAAAGCGAGTAcacttcac
      < R A H I Q L M D W T V I Y K E S M

      ←Start of Ecogpt protein coding sequence

2221 tccagcctgtttatctacggcttaaaaaagtgttcgaggggaaaaataggttgcgcgagat
      aggtcggacaaaatagatgccgaatttttcacaagctccccctttatccaaacgcgtcta

2281 tatagagatccgtcactgttctttatgatctacttccttaCCGTGCAATAAATTAGAATA
      atatcttaggcagtgacaagaaatactagatgaaggaaatGGCAGTTATTTAATCTTAT

2341 TATTTTCTACTTTTACGAGAAATTAATTATTGTATTATTATTATGGGTGAAAAACTTA
      ATAAAAGATGAAATGCTCTTTAATAATAACATAAAATAATAATACCCACTTTTGAAT

```

Figure 3 continued

8/28

← *Vaccinia virus p7.5 promoter (marked in upper case)*

2401 CTATAAAAGCGGGTGGGTTTGGAAattagtgatcagtttatgtatatcgcaactaccggc
GATATTTTCGCCCCACCCAAACCTtaatcactagtc aaatacatatagcgttgatggccg

2461 atatggctattcgacatcgagaacattaccacatgataagagattgtatcagtttcgta
tataccgataagctgtagctcttgtaatgggtgtactattctctaacatagtcaaaagcat

2521 gtcttgagtattggtattactatatagtatatgtcgggaattcagatccatgcagatccc
cagaactcataaccataatgatatacatatacagcccttaagtctagtgactcttaggg

2581 ccctgccccggttattaTTATTTTGACACCAGACCAACTGGTAATGGTAGCGACCGGCGC
gggacgggccaataaATAA AAAACTGTGGTCTGTGTGACCATTACCATCGTGCGCGCG
< • K Q C W V L Q Y H Y R G A S

End of beta-Galactosidase protein coding sequence

2641 TCAGCTGGAATTCGCGCGATACTGACGGGCTCCAGGAGTCGTCGCCACCAATCCCCATAT
AGTCGACCTTAAGGCGGCTATGACTGCCCGAGGTCCTCAGCAGCGGTGGTTAGGGGTATA
< L Q F E A S V S P S W S D D G G I G M H

2701 GGAAACCGTCGATATTCAGCCATGTGCCCTTCTCCGCGTGCAGCAGATGGCGATGGCTGG
CCTTTGGCAGCTATAAGTCGGTACACGGGAAGAGCGCACGTCGTCTACCGCTACCGACC
< F G D I N L W T G E E A H L L H R H S T

2761 TTTCATCAGTTGCTGTGACTGTAGCGGCTGATGTTGAAGTGGAAAGTCGCCGCCCACT
AAAGGTAGTCAACGACAACCTGACATCGCCGACTACAACCTTGACCTTACGCGCGCGGTGA
< E M L Q Q Q S Y R S I N F Q F D G R W Q

Figure 3 continued

9/28

2821 GGTGTGGGCCATAATTCAATTCGGCGCTCCCGCAGCGCAGACCGTTTTTCGCTCGGGAAGA
CCACACCCGGTATTAAAGTTAAGCGCGCAGGGCGTCGCGTCTGGCAAAAGCGAGCCCTTCT
< H P G Y N L E R T G C R L G N E S P F V

2881 CGTACGGGGTATACATGTCTGACAAATGGCAGATCCCAGCGTCAAAACAGCGGCAGTAA
GCATGCCCCATATGTACAGACTGTACCGTCTAGGTCGCCAGTTTGTCCGCCGTCATT
< Y P T Y M D S L P L D W R D F C A A T L

2941 GCGGTGCGGATAGTTTTCTTGGGCCCCCTAATCCGAGCCAGTTTACCCGCTCTGTACCT
CCGCCAGCCCTATCAAAAGAACGCCGGGATTAGGCTCGGTCAAATGGCGAGACGATGGA
< R D P Y N E Q P G L G L W N V R E A V Q

3001 GCGCCAGCTGGCAGTTCAGGCCAATCCGCCCGGATGCGGTGTATCGCTCGCCACTTCAA
CGCGTCGACCGTCAAGTCCGGTTAGGCGCGGCTACGCCACATAGCGAGCGGTGAAGTT
< A L Q C N L G I R A P H P T D S A V E V

3061 CATCAACGGTAATCGCCATTTGACCACCTACCATCAATCCGGTAGGTTTCCGGCTGATAA
GTAGTTGCCATTAGCGGTAAACTGGTGTATGGTAGTTAGGCCATCCAAAAGGCCGACTATT
< D V T I A M Q G S G D I R Y T K R S I F

3121 ATAAGGTTTCCCCTGATGCTGCCACGCTGAGCGTCGTAATCAGCACCGCATCAGCAA
TATTCCAAAAGGGGACTACGACGGTGGCGACTCGCCAGCATTAGTCGTGGCGTAGTCGTT
< L T K G Q H Q W A H A T T I L V A D A L

3181 GTGTATCTGCCGTGCACCTGCAACAACGCTGCTCGGCCCTGGTAATGGCCCGCCCTTCC
CACATAGACGGCACGTGACGTTGTTGCGACGAAGCCGGACCATTACCGGGCGGCGGAAGG
< T D A T C Q L L A A E A Q Y H G A A K W

3241 AGCGTTCGACCCAGCGGTTAGGGTCAATGCGGGTCGCTTCACTTACGCCAATGTCGTTAT

Figure 3 continued

10/28

TCGCAAGCTGGGTCCGCAATCCCAGTTCGCCAGCGAAGTGAATGCGGTACAGCAATA
 < R E V W A N P D I R T A E S V G I D N D

3301 CCAGCGGTGCACGGGTGAAC TGATCGCGCAGCGCGTCAGCAGTGT TTTTATCGCCAA
 GGTGCCACGTGCCACTTGACTAGCGGTGCGCGCAGTCGTCAACAAAAATAGCGGTT
 < L P A R T F Q D R L P T L L Q K K D G I

3361 TCCACATCTGTGAAAGAACCTGACTGGCGTTAAATTGCCAACGCTTATTACCCAGCT
 AGGTGTAGACACTTCTTTTCGGACTGACCGCCAATTTAACGGTTGCCAATAATGGGTCGA
 < W M Q S L F G S Q R N F Q W R K N G L E

3421 CGATGCAAAAATCCATTTCGTTGGTGCAGATGCGGGATGGCGTGGACGCGCGGGGA
 GCTACGTTTTTAGTTAAAGCGACCACCACTGCTACGCCCTACCGCACCCCTGCGCCGCCCT
 < I C F D M E S T T L H P I A H S A A P L

3481 GCGTCACACTGAGGTTTTCCGCCAGACGCCACTGCTGCCAGGCGTGATGTCCCGGCTT
 CGCAGTGTGACTCCAAAAGCGGTCTGCGGTGACGACGGTCCGCGACTACACGGGCCGAA
 < T V S L N E A L R W Q Q W A S I H G A E

3541 CTGACCATGCGGTCCGTTCCGTTGCACTACGCGTACTGTGAGCCAGAGTTCGCCGGCG
 GACTGGTACGCCAGCGCAAGCCAACGTGATGCGCATGACACTCGGTCTCAACGGGCCGCG
 < S W A T A N P Q V V R V T L W L Q G A S

3601 TCTCCGGCTGCGGTAGTTCAGGCAGTTCAATCAACTGTTTACCTTGTGGAGCGACATCCA
 AGAGGCCGACGCCATCAAGTCCGTCAAGTTAGTTGACAAATGGAACACCTCGCTGTAGGT
 < E P Q P L E P L E I L Q K G Q P A V D L

3661 GAGGCACTTCACCGCTTGCCAGCGGCTTACCATCCAGCGCCACCATCCAGTGCAGGAGCT
 CTCCGTGAAGTGGCGAACGGTCGCCGAATGGTAGGTGCGGGTGGTAGTCACTGCTCCTCGA

Figure 3 continued

11/28

< P V E G S A L P K G D L A V M W H L L E
 3721 CGTTATCGCTATGACGGAACAGGTATTTCGCTGGTCACCTTCGATGGTTTGCCCGGATAAAC
 GCAATAGCGATACTGCCCTTGTCATAAAGCAGCAGTGAAGCTACCAACGGGCCATTG
 < N D S H R F L Y E S T V E I T Q G S L R
 3781 GGAAC TGGA AAAA CTGCTGCTGGTGTGTTTGTCTCCGTCAGCGCTGGATCGGCGTGCGGT
 CCTTGACCTTTTGTACGACGACCAACAAAACGAAGCAGTCGCGACCTACGCCGACGCCA
 < F Q F F Q Q Q H K A E T L A P H P T R D
 3841 CGGCAAAGACGACCGGTTCATACAGAACTGGCGATCGTTCGGCGTATGCCAAATCAC
 GCCGTTTCTGGTCTGGCAAGTATGTCTTGACCGCTAGCAAGCCGATAGCGGTTTGTAGTG
 < A F V L G N M C F Q R D N P T D G F D G
 3901 CGCCGTAAGCCGACCGGTTGCCGTTTTCATCATATTTAATCAGCGACTGATCCACCC
 GCGGCATTGCGCTGGTGCCCAACGGCAAAAGTAGTATAAATTAGTCGCTGACTAGGTGGG
 < G Y A S W P N G N E D Y K I L S Q D V W
 3961 AGTCCCAGACGAAGCCGCTGTAAACGGGGATACTGACGAAACGCCCTGCCAGTATTAG
 TCAGGCTCTGCTTCGGCGGGACATTTCGCCCTATGACTGCTTTCGGACGGTCATAAATC
 < D W V F G G Q L R P Y Q R F A Q W Y K A
 4021 CGAAACCGCCAAGACTGTACCCATCGCTGGCGGTATTTCGCAAGGATCAGCGGGCGCG
 GCTTTGGCGGTTCTGACAATGGGTAGCGCACCCGCATAGCGTTTCCTAGTCGCCCGCGC
 < F G G L S N G M A H A Y E C L I L P R T
 4081 TCTCTCAGGTAGCGAAAGCCATTTTGTATGGACCATTTTCGGCACAGCCGGGAAGGCT
 AGAGAGGTCCATCGCTTCGGTAA AAAA CTACCTGGTAAAGCCGTGTCGGCCCTTCCCGA
 < E G P L S L W K K I S W K P V A P F P Q

Figure 3 continued

12/28

4141 GGTCCTCATCCACGGCGCGTACATCGGGCAATAATATCGGTGCCGTGGTGTGGCTC
 CCAGAAAGTAGGTGCGCGCATGTAGCCGTTTATTATAGCCACCGGCACACAGCCGAG
 < D E D V R A Y M P C I I D T A T T D A G

 4201 CGCCGCCCTTCATACTGCACGGGGGGAAGATCGACAGATTGTGATCCAGCGATACAGCG
 GCGGCGGAAGTATGACGTGGCCCGCCCTTCCTAGTGTCTAAACTAGGTGCTATGTGCGC
 < G G E Y Q V P R S P D V S K I W R Y L A

 4261 CGTCGTATTAGCGCGGTGGCCTGATTCATCCCCAGCGACAGATGATCACACTCGGGT
 GCAGCACTAATCGCGGCACCGGACTAAGTAAGGGTGGTGGTCTACTAGTGTGAGCCCA
 < D H N A G H G S E N G L S W I I V S P H

 4321 GATTACGATCGCGCTGCACCATTCGCGTTACGCGTTCGCTCATCGCCGGTAGCCAGCGCG
 CTAATGCTAGCGCGACGTGGTAAGCGCAATCGGCAAGCGAGTAGCGGCCCATCGGTCCGCGC
 < N R D R Q V M R T V R E S M A P L W R P

 4381 GATCATCGGTCAGACGATTTCATTGGCACCATGCCGTGGGTTTCAATATTGGCTTCATCCA
 CTAGTAGCCAGTCTGCTAAGTAACCGTGGTACGGCACCCAAAGTTATAACCGAAGTAGGT
 < D D T L R N M P V M G H T E I N A E D V

 4441 CCACATACAGGCGTAGCGGTGCGACAGCGGTGTACCACAGCGGATGGTTCGGATAATGCG
 GGTGTATGTCCGGCATCGCCAGCGGTGCGCACATGGTGTGCGCTACCAAGCCTATTACGC
 < V Y L G Y R D C L T Y W L P H N P Y H S

 4501 AACAGCGACGGCGTTAAAGTTGTTCTGCTTCATCAGCAGGATATCCTGCACCATCGTCT
 TTGTGCGGTGCCGCAATTTCACAAGACGAAGTAGTCGTCCTATAGGACGTGGTAGCAGA
 < C R V A N F N N Q K M L L I D Q V M T Q

Figure 3 continued

13/28

4561 GCTCATCCATGACCTGACCATGCAGAGGATGATGCTCGTGACGGTTAACGCCTCGAATCA
 CGAGTAGGTACTGGACTGGTACGTCCTCTACTACGAGCACTGCCAATTGCGGAGCTTAGT
 < E D M V Q G G H L P H H E H R N V G R I L

 4621 GCAACGGCTTGCCGTTT CAGCAGCAGCAGACCATTTTCAATCCGCACCTCGCGGAAACCGA
 CGTTGCCGAACGGCAAGTCGTCGTCGTCTGGTAAAGTTAGCGGTGGAGCGCCTTTGGCT
 < L P K G N L L L L L G N E I R V E R F G V

 4681 CATCGCAGGCTTCTGCTTCAATCAGCGTGCCGTCGGCGGTGTGAGTTCAACCAACCGCAC
 GTAGCGTCCGAAGACGAAAGTTAGTCGCACGGCAGCCGCCACACGTCAAGTTGGTGGCGTG
 < D C A E A E I L T G D A T H L E V V A R

 4741 GATAGAGATTCGGGATTTCCGGCTCCACAGTTTCGGGTTTTCGACGTTTCAGACGTAGTG
 CTATCTTAAGCCCTAAAGCCGCGAGGTGTCAAAGCCCAAAGCTGCAAGTCTGCATCAC
 < Y L N P I E A S W L K P N E V N L R L T

 4801 TGACGGCATCGGCATAACCAACCGCTCATCGATAATTTACCCGCCGAAAGCGCGGTGC
 ACTGCGCTAGCCGTATTGGTGGTGGAGTAGCTATTAAAGTGGCGGCTTTCGCCGCCACG
 < V R D A Y G G R E D I I E G G F P A T G

 4861 CGTGGCGACCTGCGTTTCACCCCTGCCATAAAGAAACTGTTACCCGTAGGTAGTCACGCA
 GCGACCGCTGGACGCAAGTGGGACGGTATTCTTTGACAATGGGCATCCATCAGTGCCT
 < S A V Q T E G Q W L S V T V R L Y D R L

 4921 ACTCGCCGACATCTGAACCTTCAGCCCTCCAGTACAGCGCGGCTGAAATCATCTAAAGC
 TGAGCGCGGTGTAGACTTGAAGTCGGAGGTATGTGCGGCCGACTTTAGTAGTAATTCG
 < E G C M Q V E A E L V A R S F D D N F R

 4981 GAGTGGCAACATGGAATCGCTGATTGTGTAGTCGGTTTATGCAGCAACGAGACGTCAC

Figure 3 continued

14/28

```

CTCACCGTTGTACCTTTAGCGACTAAACACATCAGCCAAATACGTGTTGCTCTGCAGTG
< T A V H F D S I Q T T P K H L L S V D R

5041 GGAAATGCCGCTCATCCGCCACATATCCTGATCTCCAGATAAACTGCCGTCACTCCAAC
CCTTTACGGCGAGTAGCGGTGTATAGGACTAGAAAGTCTATTGACGGCAGTGAGGTTG
< F I G S M R W M D Q D E L Y S G D S W R

5101 GCAGACCATCACCGGAGGCGGTTTCTCCGGCGGTAAATAATGCGCTCAGGTCAAATT
CGTCGTGGTAGTGGCGCTCCGCCAAAAGAGCCCGGCATTTTACGCGAGTCCAGTTTAA
< L V M V A L R N E G A R L F A S L D F E

5161 CAGACGGCAAACGACTGTCTGCCGTAAACGACCCAGCGCCCGTTGCCACCACAGATGAA
GTCTGCCGTTTGTGACAGGACCGGCATTTGGCTGGTCGCGGCAACGTGTCTACTT
< S P L R S D Q G Y G V W R G N C W L H F

5221 ACGCCGAGTTAACGCCCATCAAAAATAATTCCGCTCTGGCCTTCCGTAGCCAGCTTTCAT
TGCGGCTCAATTGCGGTAGTTTATTAAGCGCAGACCGGAAGACATCGGTGCGAAAGTA
< A S N V G D F I I R T Q G E Q L W S E D

5281 CAACATTAAATGTGAGCGAGTAACAACCCGTCGGATTCTCCGTGGGAACAAACGGCGGAT
GTTGTAATTACACTCGCTCATTTGTTGGCAGCCTAAGAGGCACCCCTTGTTCGCCGCTA
< V N F T L S Y C G T P N E T P V F P P N

5341 TGACCGTAATGGGATAGGTTACGTTGGTGTAGATGGGCGCATCGTAACCGTGCATCTGCC
ACTGGCATTACCCCTATCCAATGCAACCACATCTACCCGCTAGCATTTGCACGTAGACGG
< V T I P Y T V N T Y I P A D Y G H M Q W

5401 AGTTTGAGGGGACGACGACAGTATCGGCCCTCAGGAAGATCGCACTCCAGCCAGCTTCCG
TCAAAC TCCCTGCTGTCTCATAGCCGGAGTCCTTCTAGCGTGAGGTCGGTCGAAAGGC

```

Figure 3 continued

15/28

```

< N S P V V V T D A E P L D C E L W S E P
5461 GCACCGCTTCTGTCCGGAACAGGAAAGCGCCATTGCCATTTCAGGCTGCGCAACT
    CGTGGCGAAGACACCGCCTTTGGTCCGTTTCGGGTAAGCGGTAAGTCGACGCGTTGA
< V A E P A P F W A F R W E G N L S R L Q
5521 GTTGGGAAGGCGATCGGTGGGGCTCTTCGCTATTACGCCAGCTGGCGAAAGGGGAT
    CAACCTTCCCGCTAGCCACGCCCGGAGAACGATAATGCGGTCGACCGCTTCCCCCTA
< Q S P R D T R A E E S N R W S A F P P H
5581 GTGCTGCAAGGCGATTAAAGTTGGGTAAACGCCAGGGTTTCCCAAGTCACGACGTTGTAAA
    CACGACGTTCCGCTAATTCAACCCATTGCGGTCCCAAAAGGTCAGTGTGCAACATTTT
< A A L R N L Q T V G P N E W D R R Q L V
5641 CGACGGGATCTAGCATggatctagccATTAGTATCCTAAAAATTGAATTGTAATTATCGA
    GCTGCCCTAGATCGTAcctagatcggTAAATCATAGGATTTAACTTAACATTAAATAGCT
< V P D L M
    ←Start of beta-Galactosidase protein coding sequence
    ← Fowlpox virus bidirectional promoter (in bold) →
5701 TAATAAATGgacggatcgATGAAATATACAAGTTATATCTTGGCTTTTCAGCTCTGCATC
    ATTATTACctgcctagcTACTTTATATGTTCAATATAGAACCGAAAGTCGAGACGTAG
    > M K Y T S Y I L A F Q L C I
    Human interferon gamma protein coding sequence →
5761 GTTTTGGTTCTCTTGGCTGTTACTGCCAGGACCCATATGTAAAGAAGCAGAAACCTT
    CAAAACCCAAAGAGAACCGACAATGACGGTCCTGGGTATACATTTTCTTCGTCTTTGGAA
    > V L G S L G C Y C Q D P Y V K E A E N L

```

Figure 3 continued

16/28

```

5821 AAGAAATATTTAATGCAGGTCAATTCAGATGTAGCGGATAATGGAACCTCTTTCTTAGGC
    TTCCTTATAAAATACGTCCAGTAAGTCTACATCGCCTATTACCTTGAGAAAAAGAAATCCG
    > K K Y F N A G H S D V A D N G T L F L G

5881 ATTTGAAGAATTGAAAAGAGGAGAGTGACAGAAAAATAATGCAGAGCCAAATGTCTCC
    TAAACCTTCTTAACCTTCTCCTCTCACGTGCTTTTATTATTACGTCTCGGTTTAACAGAGG
    > I L K N W K E E S D R K I M Q S Q I V S

5941 TTTTACTTCAAACCTTTTAAAAAAGATGACCAAGAGCATCCAAAAGAGTGTGGAG
    AAAATGAAGTTTGAAAAATTTTGAAATTTCTACTGGTCTCGTAGGTTTCTCACACCTC
    > F Y F K L F K N F K D D Q S I Q K S V E

6001 ACCATCAAGGAAGACATGAATGTCAAGTTTTCATAGCAACAAGAAACGAGATGAC
    TGGTAGTTCCCTTCTGTACTTACAGTTCAAAAAGTTATCGTTGTTTCTTTGCTCTACTG
    > T I K E D M N V K F F N S N K K R D D

6061 TTCGAAAAGCTGACTAATTATTCGGTAACTGACTTGAATGTCCAACGCAAGCAATACAT
    AAGCTTTTCGACTGATTAATAAGCCATTGACTGAACCTTACAGGTTGCGTTTCGTTATGTA
    > F E K L T N Y S V T D L N V Q R K A I H

6121 GAACTCATCCAAGTGATGGCTGAACTGTGCCAGCAGCTAAAACAGGGAAGCGAAAAGG
    CTTGAGTAGGTTCACTACCGACTTGACAGCGGTCGTCGATTGTGCCCTTCGCTTTTCC
    > E L I Q V M A E L S P A A K T G K R K R

6181 AGTCAGATGCTGTTTCGAGGTCGAAGAGCATCCCAGTAATggttgctcctgccaatat
    TCAGTCTACGACAAAGCTCCAGCTTCTCGTAGGGTCATTaccaacaggacgacgttata
    > S Q Q M L F R G R R A S Q •

6241 ttgaattttaaatctaataatctatttattaataatttaacattatttatatgggggaatatat

```

Figure 3 continued

17/28

aacttaaaatttagatttagataaaataattataaaattgtaataaaatatacccttatata

6301 ttttagactcatcaatcaataagtagtattataatagcaactTTTTGTaatggatccc
 aaaactgagtagttagttattcataaaattattatcggttgAAAAAACAttacctaggg
Engineered transcriptional stop motif (in upper case)

6359 agctctctgacgcaggactcggcttgctgaagcgcgcacagcaagagcgagggcgcc
 tcgagagagctgcgtcctgagccgaacgacttcgcgcgtgctcgttctcgcgtccccgcgg

6419 gactggtgagtacgcccaatttttgactagcggaggctagaagagagagagATGGGTGCG
 ctgaccactcatgcgggttaaaaaactgatcgctccgatcttcctctctcTACCCACGC
 > M G A

HIV gag protein coding sequence →

6479 AGAGCGTCGGTATTAAAGCGGGGAGAAATTAGATAAATGGGAAAAAATTCGGTTAAGGCCA
 TCTCGCAGCCATAATTCGCCCCCTCTTAATCTATTACCTTTTTTAAGCCAAATCCGGT
 > R A S V L S G G E L D K W E K I R L R P

6539 GGGGAAAGAAAAATATAAGTTAAACATATAGTAGGCAAGCAGGGAGCTAGAACGA
 CCCCCTTCTTTTATATATCAATTTTGTATATCATACCCGTTCTCGTCCCTCGATCTTGCT
 > G G K K K Y K L K H I V W A S R E L E R

6599 TTCGCAGTCAATCCTGGCCTGTAGAAACATCAGAAGGCTGCAGACAAATATTGGGACAG
 AAGGTCAGTTAGGACCGGACAAATCTTTGTAGTCTTCCGACGCTGTTTATAACCCCTGTC
 > F A V N P G L L E T S E G C R Q I L G Q

6659 CTACAGCCATCCCTTCAGACAGGATCAGAAGAACTTAGATCATTATATAATACAGTAGCA
 GATGTCGGTAGGGAAGTCTGTCTCTAGTCTTCTTGAATCTAGTAATATATATGTCATCGT
 > L Q P S L Q T G S E E L R S L Y N T V A

Figure 3 continued

18/28

```

6719 ACCCTCTATTGTGTACATCAAAGGATAGATGTAAAGACACCAAGGAAGCTTTAGAGAAG
    TGGGAGATAACACATGTAGTTTCCTATCTACATTTCTGTGTTCCCTTCGAAATCTCTTC
    > T L Y C V H Q R I D V K D T K E A L E K

6779 ATAGAGGAAGAGCAAAAAGTAAGAAAAAGCACAGCAAGCAGCAGCTGCAGCTGGC
    TATCTCCTTCTCGTTTTTGTTCATTCCTTTTCCGTGTCGTCGTCGACGTCGACCG
    > I E E Q N K S K K A Q A A A A G

6839 ACAGGAAAACAGCAGCCAGGTCAGCCAAAATTACCTATAGTGCAGAACCTACAGGGCAA
    TGTCCCTTTGTCTCGTCCAGTCCGTTTAAATGGGATATCACGTCCTTGGATGTCCTCCGTT
    > T G N S S Q V S Q N Y P I V Q N L Q G Q

6899 ATGGTACATCAGGCCATATCACCTAGAACTTTAAATGCATGGGTAAAAGTAGAGAAGAA
    TACCATGTAGTCCGGTATAGTGGATCTTGAAATTACGTACCCATTTTCATCATCTTCTT
    > M V H Q A I S P R T L N A W V K V V E E

6959 AAGGCTTTCAGCCCAGAAAGTAATACCCATGTTTTCAGCATATCAGAAGGAGCCACCCCA
    TTCCGAAAAGTCGGGCTTCATTATGGGTACAAAAGTCGTAATAGTCTTCCTCGGTGGGT
    > K A F S P E V I P M F S A L S E G A T P

7019 CAAGATTTAAACACCATGCTAAACACAGTGGGGGACATCAAGCAGCCATGCAAAATGTTA
    GTTCTAAATTTGTGGTACGAATTTGTGTCAACCCCTGTAGTTCGTCTGGTACGTTTACAAT
    > Q D L N T M L N T V G G H Q A A M Q M L

7079 AAAGAGACTATCAATGAGGAAGCTGCAGAATGGGATAGAGTGCATCCAGTGCATGCAGGG
    TTTCTCTGATAGTTACTCCTTCGACGCTCTTACCCTATCTCACGTAGTGCACGTACGTCCC
    > K E T I N E E A A E W D R V H P V H A G

```

Figure 3 continued

19/28

7139 CCTATTGCACGAGCCAAATGAGAGAAACCAAGGGGAAGTGACATAGCAGGAACACTAGT
GGATAACGTGGTCCGGTTTACTCTCTTGGTTCCCTTCCTGATCGTATCGTCTTGATGATCA
> P I A P G Q M R E P R G S D I A G T T S

7199 ACCCTTCAGGAACAAATAGGATGGATGACAAATAATCCACCTATCCCAGTAGGAGAAATC
TGGGAAGTCCTTGTATTATCCTACCTACTGTTTATAGTGGATAGGGTCATCCTCTTTAG
> T L Q E Q I G W M T N N P P I P V G E I

7259 TATAAAGATGGATAATCCTGGGATTAAATAAATAAGTAATGTATAGCCCTACCAGC
ATATTTTCTACCTATTAGGACCCCTAAATTTATTTATCATCTTACATATCGGGATGGTCCG
> Y K R W I I L G L N K I V R M Y S P T S

7319 ATTCTGGACATAAGACAAAGGACCAAGGAACCCCTTAGAGATTATGTAGCCGGTCTAT
TAAGACCTGTATTCTGTTCTCCTGGTTCCCTGGGAAATCTCTAATACATCTGGCCAAAGATA
> I L D I R Q G G P K E P F R D Y V D R F Y

7379 AAACTCTAAGAGCCGGAACAAAGCTTCACAGGATGTAAAAAATTGGATGACAGAAACCTTG
TTTGTGAGATTCTCGGCTTGTTCGAAAGTGCCACATTTTAAACCTACTGTCTTTGGAAC
> K T L R A E Q A S Q D V K N W M T E T L

7439 TTGGTCCAAAATGCAAAACCCAGATTGTAAAGACTATTTTAAAAGCATTTGGACCAGCAGCT
AACCAGGTTTACGTTTGGGTCTAACATTCTGATAAAAATTTTCGTAAACCTGGTCGTCGA
> L V Q N A N P D C K T I L K A L G P A A

7499 ACAC TAGAAGAAATGATGACAGCATGTCAAGGAGTGGGGGGACCCGGCCATAAAGCAAGA
TGTGATCTTCTTTACTACTGTCTGACAGTCCCTCACCCCCCTGGCCGGTATTTCTGTTCT
> T L E E M M T A C Q G V G G P G H K A R

7559 GTTTTGGCTGAAGCCATGAGCCAAGTAACAAATCCAGCTAACATAATGATGCAGAGAGGC

Figure 3 continued

20/28

```

CAAACCGACTTCGGTACTCGGTTTCATTTAGTTCGATGTATTACTACGTCTCTCCG
> V L A E A M S Q V T N P A N I M M Q R G

7619 AATTTAGGAACCAAGAAAGACTGTTAAGTGTTCATTTGGCAAGGAGGCACATA
TTAAATCCTTGGTTCTTCTGACAAATCACAAAGTTAACACCGTTTCTTCCCGTGTAT
> N F R N Q R K T V K C C F N C G K E G H I

7679 GCCAAAAATTGCAGGGCCCTAGGAAAAAGGGCTGTTGGAGATGTGGAAGGGAAGGACAC
CGGTTTTTAACGTCCCGGGATCCTTTTCCCGACAACCTCTACACCTTCCCTTCCCTGTG
> A K N C R A P R K K G C W R C G R E G H

7739 CAAATGAAAGATTGCACGTGAGACAGGCTAATTTTATAGGAAGATCTGGCCTTCCTAC
GTTACTTTCTAACGTGACTCTGTCCGATTAAAAATCCCTTCTAGACCGGAAGGATG
> Q M K D C T E R Q A N F L G K I W P S Y
> F F R E D L A F L
HIV pol protein coding sequence →

7799 AAGGGAAGGCCAGGGAATTTTCTCAGAGCAGACCAGCCAAACAGCCCCACCAGAAGAG
TTCCCTTCCGGTCCCTTAAAGAAAGTCTCGTCTGGTCTCGGTTGTCTGGGTGCTTCTC
> K G R P G N F L Q S R P E P T A P P E E
> Q G K A R E F S S E Q T R A N S P T R R

7859 AGCTTCAGGTTTGGGAGGAGAAACAACCTCCTCTCAGAAAGCAGGAGCCGATAGACAAG
TCGAAGTCCAAACCCCTCCTCTTTTGTGAGGGAGAGTCTTCGTCTCTCGGTATCTGTTC
> S F R F G E E K T T P S Q K Q E P I D K
> E L Q V W G G E N N S L S E A G A D R Q

7919 GAACTGTATCCTTTAACTTCCCTCAGATCACTTTTGGCAACGACCCCTCGTCACAATAA
CTTGACATAGGAAATTGAAGGAGTCTAGTGAGAAACCGTTGCTGGGAGCAGTGTATT

```

Figure 3 continued

21/28

```

>E L Y P L T S L R S L F . G N D P S S Q .
>G T V S F N F P Q I T L W Q R P L V T I

7979 GGATAGGGGGCAACTAAAGGAGCTCTATTAGATACAGGAGCAGATGATACAGTATTAG
    CCTATCCCCCGTTGATTTCCTTCGAGATAATCTATGTCTCGTCTACTATGTCATAATC
>R I G G Q L K E A L L D T G A D D T V L

8039 AAGAAATGAATTTGCCAGGAAATGGAAACCAAAATGATAGGGGGAATTGGAGGTTTAA
    TTCTTTACTTAAACGGTCCTTTTACCTTTGGTTTTTACTATATCCCCCTTAACCTCCAAAAT
>E E M N L P G K W K P K M I G G I G G F

8099 TCAAAGTAAGACAGTACGATCAGATACCTGTAGAAATCTGTGGACATAAAGCTATAGGTA
    AGTTTCATTCTGTCACTGTAGTCTATGGACATCTTTAGACACCTGTATTTGATATCCAT
>I K V R Q Y D Q I P V E I C G H K A I G

8159 CAGTATTAGTAGGACCTACACCTGTCAACATAAATTGGAAGAAATCTGTTGACTCAGATTG
    GTCATAATCATCCTGGATGTGGACAGTTGTATTAACTTCTTTAGACAACTGAGTCTAAC
>T V L V G P T P V N I I G R N L L T Q I

8219 GTTGTAATTTAAATTTCCCCCATTAGTCCTATTGAAACTGTACCAGTAAATTAAGCCAG
    CAACATGAAATTTAAAGGGGTAATCAGGATAACTTTGACATGGTCAATTTTAATTTCCGGTC
>G C T L N F P I S P I E T V P V K L K P

8279 GAATGGATGGCCCAAAAGTTAAGCAATGGCCATTGACAGAAGAAAAATAAAGCATTAG
    CTTACCTACCGGTTTCAATTCGTTACCGGTAAGTCTCTCTTTTATTTTCGTAATC
>G M D G P K V K Q W P L T E E K I K A L

8339 TAGAGATATGTACAGAAATGGAAAAGGAGGAAATTTCAAAAATTTGGCCCTGAAAATC
    ATCTCTATACATGTCCTTTACCTTTTCCTTCCCTTTTAAAGTTTTTAACCCGGACTTTTAG

```

Figure 3 continued

22/28

>V E I C T E M E K E G K I S K I G P E N

8399 CATACAATACTCCAGTATTGGCTATAAAGAAAAAGACAGTACTAAATGGAGAAAACTAG
GTATGTTATGAGGTCATAAACGATATTCTTTTCTGTCAATGATTTACCTCTTTTGATC
>P Y N T P V F A I K K K D S T K W R K L

8459 TAGATTTCAGAGAACTTAATAAAGAACTCAAGACTTCTGGGAAGTTCAGTTAGGAATAC
ATCTAAAGTCTCTTGAATTATTCTTGAGTTCTGAAGACCCCTTCAAGTCAATCCTTATG
>V D F R E L N K R T Q D F W E V Q L G I

8519 CACACCCCGCAGGGTTAAAAAAGAAAAATCAGTAACAGTATTGGATGTGGTGATGCAT
GTGTGGGCGTCCCAATTTTCTTTTCTTTTAGTCATTGTGCATAAACCTACACCCACTACGTA
>P H P A G L K K K K S V T V L D V G D A

8579 ACTTTTCAGTTCCTTAGATAAAGACTTTAGAAAAGTATACTGCATTTACCATACCTAGTA
TGAAAAGTCAAGGGAATCTATTCTTGAAATCTTTCATATGACGTAAATGGTATGGATCAT
>Y F S V P L D K D F R K Y T A F T I P S

8639 TAAACAAATGAGACACCCAGGGATTAGATATCAGTACAATGTGCTGCCACAGGGATGAAAG
ATTGTTACTCTGTGGTCCCTAATCTATAGTCATGTTACACGACGGTGTCCCTACCTTTC
>I N N E T P G I R Y Q Y N V L P Q G W K

8699 GATCACCAGCAATATCCAAAGTAGCATGACAAAAATCTTAGAGCCCTTTAGAAAAACAGA
CTAGTGGTCGTTATAAGGTTTCATCGTACTGTTTGTAGAAATCTCGGAAAAATCTTTTGCT
>G S P A I F Q S S M T K I L E P F R K Q

8759 ATCCAGACATAGTTATCTATCAATACATGGATGATTGTATGTAGGATCTGACTAGAAA
TAGGCTGTATCAATAGATAGTTATGTACCTACTAAACATACATCCTAGACTGAATCTTT
>N P D I V I Y Q Y M D D L Y V G S D L E

Figure 3 continued

23/28

8819 TAGGGCAGCATAGAACAAAAATAGAGGAACCTGAGACAGCATCTGTTGAGGTGGGATTTA
ATCCCGTCGTATCTTGTTTATCTCCTTGACTCTGCTGTAGACAACTCCACCCCTAAAT
>I G Q H R T K I E E L R Q H L L R W G F

8879 CCACACCAGACAAAAAATCAGAAAGAACCTCCATTCCTTTGGATGGTTATGAACCTCC
GGTGTGGTCTGTTTGTAGTCTTCTTGAGGTAAGGAAACCTACCCAAATACTTGAGG
>T T P D K K H Q K E P P F L W M G Y E L

8939 ATCCTGATAAATGGACAGTACAGCCCTATAATGCTGCCAGAAAAAGACAGCTGGACTGTCA
TAGGACTATTTACCTGTCTATGTCGGATATTACGACGGTCTTTTCTGTCGACCTGACAGT
>H P D K W T V Q P I M L P E K D S W T V

8999 ATGACATACAGAAAGTGTGGGAAAATTGAATTGGCAAGTCAGATTTATGCAGGGGATTA
TACTGTATGTCTTCAATCACCCCTTTTAACTTAACCCGTTTCAGTCTAAATACGTCCTTAAT
>N D I Q K L V G K L N W A S Q I Y A G I

9059 AAGTAAAGCAGTTATGTAAACTCCTTAGAGGAACCAAGCACAATAAGAAATACAC
TTCATTTTCGTCAATACATTTGAGGAATCTCCTTGTTTCGTGATTGTCTTCATTATGGTG
>K V K Q L C K L L R G T K A L T E V I P

9119 TAACAGAAAGCAGAGCTAGAACTGGCAGAAAAACAGGGAGATTCTAAAAGAACAGTAC
ATTGTCTTCTTCGTCTCGATCTTGACCGTCTTTTGTCCTCTAAGATTTTCTTGGTTCATG
>L T E E A E L E L A E N R E I L K E P V

9179 ATGAAGTATATTATGACCCCATCAAAAGACTTAGTAGCAGAAATACAGAAGCAGGGCAAG
TACTTCATATAATACTGGGTAGTTTCTGAATCATCGTCTTTATGTCTTCTGTCCTCCCGTTC
>H E V Y Y D P S K D L V A E I Q K Q G Q

Figure 3 continued

24/28

9239 GCCAATGGACATATCAAAATTTATCAAGAGCCATTTAAAAATCTGAAAAACAGGAAAGTATG
CGGTTACCTGTATAGTTTAAATAGTTCTCGGTAAATTTTATAGACTTTTGCTTCATAC
>G Q W T Y Q I Y Q E P F K N L K T G K Y

9299 CAAGGATGAGGGTGCCACACTAATGATGTAAAAACAGTTAAACAGAGGCAGTGCAAAAAG
GTTCTACTCCCCACGGGTGTGATTACTACATTTTGTCATTTGTCAATTGTCTCCGTCACGTTTTTC
>A R M R G A H T N D V K Q L T E A V Q K

9359 TATCCACAGAAAGCATAAGTAATATGGGAAAGATTCTAAATTTAAACTACCCATACAAA
ATAGGTGCTTTTCGTATCATTTATACCCCTTCTAAGGATTTAAATTTGATGGGTATGTTT
>V S T E S I V I W G K I P K F K L P I Q

9419 AGGAAACATGGGAAGCATGGTGGATGGAGTATTTGGCAAGCTACCTGGATTCTGAGTGGG
TCCTTTGTACCCCTTCGTACCACTACCTACCTCATAAACCGTTTCGATGGACCTAAGGACTCACCC
>K E T W E A W W M E Y W Q A T W I P E W

9479 AGTTGTCAATACCCCTCCCTTAGTGAATATGTACCAAGTTAGAGAAAGAACCCATAG
TCAAACAGTTATGGGAGGGAATCACTTTAATACCATGGTCAATCTCTTTCTTGGGTATC
>E F V N T P P L V K L W Y Q L E K E P I

9539 TAGGAGCAGAAACTTTCTATGTAGATGGGCGAGCTAATAGGGAGACTAAATTAGGAAAAG
ATCCTCGTCTTTGAAAGATACATCTACCCCGTCGATTATCCCTCTGATTTAATCCTTTTC
>V G A E T F Y V D G A A N R E T K L G K

9599 CAGGATATGTTACTGACAGAGGAAGACAAAAAGTTGTCTCCATAGCTGACACAACAAATC
GTCCTATACAATGACTGTCTCCTTCTGTGTTTTTCAACAGAGGTATCGACTGTGTGTTTAG
>A G Y V T D R G R Q K V V S I A D T T N

9659 AGAAGACTGAATTACAAGCAATTTCATCTAGCTTTGCAGGATTTCGGGATTAGAAGTAAACA

Figure 3 continued

25/28

```

TCCTCTGACTTAATGTTTCGTTAAGTAGATCGAAACGTCCTAAGCCCTAATCTTCATTGTG
>Q K T E L Q A I H L A L Q D S G L E V N

9719 TAGTAACAGACTCACAAATATGCATTAGGAATCATTCAAGCACAAACCAGATAAGAGTGAAT
ATCATTTGTCGAGTGTATACGTAATCCCTTAGTAAGTTCGTGTTGGTCTATTCTCACTTA
>I V T D S Q Y A L G I I Q A Q P D K S E

9779 CAGAGTTAGTCAGTCAAATAATAGAGCAGTTAATAAAAAAGGAAAGGTCTACCTGGCAT
GTCTCAATCAGTCAGTTTATTATCTCGTCAATTATTTTCCCTTTCCAGATGGACCGTA
>S E L V S Q I I E Q L I K E K V Y L A

9839 GGTACCAGCACAAAGGAATTGGAGGAAATGAACAAGTAGATAAAATTAGTCAGTGCTG
CCCATGGTCGTGTTTCCTTAACCTCCTTACTGTTCATCTATTTAATCAGTCACGAC
>W V P A H K G I G G N E Q V D K L V S A

9899 GAATCAGGAAAGTACTATTTTGAATGGAATAGATAAGGCCCAAGAAACATGAGAAAT
CTTAGTCCTTTCATGATAAAAACCTTACCTTATCTATTCGGGTTCTTCTGTACTCTTTA
>G I R K V L F L N G I D K A Q E E H E K

9959 ATCAGAGTAATTGGAGAGCAATGGCTAGTGATTTTAACCTGCCACCTGTAGTAGCAAAAG
TAGTGTCAATTAACCTCTCGTTACCGATCACTAAATTTGGACGGTGGACATCATCGTTTTC
>Y H S N W R A M A S D F N L P P V A K

10019 AAATAGTAGCCAGCTGTGATAAAATGTCAGCTAAAGGAGAAGCCATGCATGGACAGTAG
TTTATCATCGGTCGACACTATTTACAGTCGATTTTCCCTCTTCGGTACGTACCTGTTTCATC
>E I V A S C D K C Q L K G E A M H G Q V

10079 ACTGTAGTCCAGGAATATGGCAACTAGATTGTACACATCTAGAAGGAAAAATTATCCTGG
TGACATCAGGTCCTTATACCGTTGATCTAACATGTGTAGATCTTCCCTTTTAAATAGGACC

```

Figure 3 continued

26/28

>D C S P G I W Q L D C T H L E G K I I L

10139 TAGCAGTTCATGTAGCCAGTGGATATATAGAAGCAGAAAGTTATTCAGCAGACAGAGGGC
ATCGTCAAGTACATCGGTCACCTATATATCTTCGTCTTCAATAAGGTCGTCTCTGTCCCG
>V A V H V A S G Y I E A E V I P A E T G

10199 AGGAAACAGCATATTTTCTCTTAAATTAGCAGGAAGATGGCCAGTAAAAACAATACATA
TCCTTTGTGCGTATAAAAGAGAATTTTAATCGTCTCTACCGTCATTTTGTGTTATGTAT
>Q E T A Y F L L K L A G R W P V K T I H

10259 CAGACAAATGGCAGCAATTTCAACAGTACTACGGTTAAGGCCCGCTGTGGGCGAGGGA
GTCTGTTACCGTCGTTAAAGTGGTCATGATGCCAATTCGGCGGACAAACCCGTCCT
>T D N G S N F T S T T V K A A C W A G

10319 TCAAGCAGGAATTTGGCATTCCTACAATCCCCAAAGTCAAGGAGTAGTAGAATCTATGA
AGTTCGTCCTTAAACCGTAAGGATGTTAGGGGTTTCAGTTCCTCATCATCTTAGATACT
>I K Q E F G I P Y N P Q S Q G V V E S M

10379 ATAATGAATTAAAGAAAATTTATAGCACAGTAAGAGATCAGGCTGAACACCTTAAAGACAG
TATTACTTAATTTCTTTTAATATCCTGTCCATTCTCTAGTCCGACTTGTGGAATCTGTC
>N N E L K K I I G Q V R D Q A E H L K T

10439 CAGTACAAATGGCAGTATTCATCCACAATTTTAAAGAAAAGGGGGGATTTGGGGGATACA
GTCATGTTTACCGTCAATAAGTAGGTGTTAAATTTTCTTTCCCTAACCCCTATGT
>A V Q M A V F I H N F K R K G G I G G Y

10499 GTGCAGGGGAAAGATAGTACATAATAGCAACAGACATACAAACTAAAGAACTACAAA
CAGTCCCCCTTCTTATCATCTGTATTATCGTGTCTGTATGTTTGTGATTTCTTGATGTTT
>S A G E R I V D I I A T D I Q T K E L Q

Figure 3 continued

27/28

```

10559 AGCAAATTACAAAAATTCAAAATTTTCGGGTTATTACAGGGACAAACAAGATCCCCCTTT
TCGTTTAATGTTTTTAAGTTTTTAAAGCCCCAAATAATGTCCCTGTTGTTCTAGGGGAAA
>K Q I T K I Q N F R V Y Y R D N K D P L

10619 GAAAGGACCAAGAGCTTCTCTGGAAAGGTGAAGGGGCAGTAGTAATACAAGATAATA
CCTTTCCTGGTCGTTTCGAAGAGACCTTTCACATCCCCGCATCATTAATGTTCTATTAT
>W K G P A K L L W K G E G A V V I Q D N

10679 GTGACATAAAGTAGTGCCAAGAAAGAAAGCAAAAATCATTAGGGATTATGGAACACAGA
CACTGTATTTTCATCACGGTTCCTCTTTTCGTTTTTAGTAATCCCTAATAACCTTTTGCT
>S D I K V V P R R K A K I I R D Y G K Q

10739 TGGCAGGTGATGTTGTGGCAAGTAGACAGGATGAGGATTAGaacatggaaaagtta
ACCGTCCACTACTAAACACACCGTTTCATCTGTCTACTCTCTAATCctgtaccttttcaaat
>M A G D D C V A S R Q D E D .

10799 gtaaaacaccatagggtcgactgcagaagcttccatggggagctctttagtgaataaat
catttgggtatcccagctgacgtcttcgaaggtagccctcgagaaatcacattattta

10859 ttaataaaaatattgacaaaaatagttaaaatgaatatatgaaagtacattatacacggaATG
aattattttataaactgttttatcaatttacttataatactttcatgtaatatgtgcctTAC

10919 GAGTTCGATATTAGTTCTTGCAGAAATGATATATTCTGTTCTCGAACAAATATCACTTTGTT
CTCAAGCTATAATCAAGAACGTCTTACTATATAAGACAAAGAGCTTGTATTATAGTGAAACAA

10979 ACTGATAATCGTTATAACAACCAATAATCAAAAAATTTAGAATTATATTACTGTTTAAAA
TGACTATTAGCAATATTGTTGGTATTAGTTTTTAAATCTTAATATAATATGACAAATTTT
Fowlpox virus 3' flanking region of insertion site (in upper case) →

```

Figure 3 continued

28/28

11039 GATTCTACGATAAAGAAATATCCGTACAGGTTTGTTCTGAAATTCACCTTTGTAAGATAC
CTAAGATGCTATTTCTTTATAGGCATGTCCAAACAAAGACTTTAAGTGAAACATTCCTATG

11099 ATAAATTAACAAATTCAGGGGGA AAAATCTTTACAAAATTAGTATAGAAAGCTATAGATATA
TATTAAATTGTTTAAAGTCCCCCTTTTAGAAAATGTTTAAATCATATCTTCGATATCTATAT

11159 TCAAAAGGTAGACAACAAATAATCAGAACCTAATTTTTTTATCAAAAAATTA AAAATATAA
AGTTTCCCATCTGTGTGTTATTAGTCTTGGATTAAAAAATAGTTTTTTAAATTTTATATAT

11219 ATAAATGA AAAATAACTTGTATGAAGAAAAAATGAACATGAGTAAGAAACAAGTAAAAA
TATTTTACTTTTTATTGAACATACTTCTTTTTTACTTGTA CTCACTCTTTGTTCATTTTT

11279 CTCAAAGTAATGTAATAATAACGCATCTAGATTTACATGCCCTGGATGCGGTGCA
GAGTTTCATTTACATTATTATTGCGGTAGATCTAAATGTACGGACCTACGCCACGT

Figure 3 continued